



Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Robert Greene Sterne
Edward J. Kessler
Jorge A. Goldstein
David K.S. Cornwell
Robert W. Esmond
Tracy-Gene G. Durkin
Michele A. Cimbala
Michael B. Ray
Robert E. Sokohl
Eric K. Steffe
Michael Q. Lee
Steven R. Ludwig
John M. Covert
Linda E. Alcorn
Robert C. Millionig
Donald J. Featherstone
Timothy J. Shea, Jr.
Lawrence B. Bugaisky
Michael V. Messinger
Judith U. Kim

Patrick E. Garrett
Jeffrey T. Helvey
Heidi L. Kraus
Eldora L. Ellison
Thomas C. Fiala
Albert L. Ferro*
Donald R. Banowitz
Peter A. Jackman
Teresa U. Medler
Jeffrey S. Weaver
Kendrick P. Patterson
Vincent L. Capuano
Brian J. Del Buono
Virgil Lee Beaton
Theodore A. Wood
Elizabeth J. Haanes
Joseph S. Ostroff
Frank R. Cottingham
Christine M. Lhulier

Rae Lynn P. Guest
George S. Bardmesser
Daniel A. Klein
Jason D. Eisenberg
Michael D. Specht
Andrea J. Kamage
Tracy L. Muller
Jon E. Wright
LuAnne M. DeSantis
Ann E. Summerfield
Aric W. Ledford
Helene C. Carlson
Cynthia M. Bouchez
Timothy A. Doyle
Gaby L. Longworth
Lori A. Gordon
Nicole D. Dretar
Ted J. Ebersole
Jyoti C. Iyer

Laura A. Vogel
Michael J. Mancuso
Bryan S. Wade
Aaron L. Schwartz
Michael G. Penn*
Matthew E. Kelley*
Shannon A. Carroll*
Nicole R. Kramer*

Registered Patent Agents*
Karen R. Markowicz
Nancy J. Leith
Matthew J. Dowd
Katrina Yujian Pei Quach
Bryan L. Skelton
Robert A. Schwartzman
Teresa A. Colella
Jeffrey S. Lundgren
Victoria S. Rutherford

Michelle K. Holoubek
Simon J. Elliott
Julie A. Heider
Mita Mukherjee
Scott M. Woodhouse
Christopher J. Walsh
Liliana Di Nola-Baron
Peter A. Socarras

Of Counsel
Kenneth C. Bass III
Evan R. Smith
Marvin C. Guthrie

*Admitted only in Maryland
*Admitted only in Virginia
*Practice Limited to
Federal Agencies

February 28, 2005

WRITER'S DIRECT NUMBER:
(202) 772-8587

INTERNET ADDRESS:
PGARRETT@SKGF.COM

Mail Stop Amendment

Re: U.S. Utility Patent Application
Appl. No. 09/844,432; Filed: April 30, 2001
For: **Timing Recovery and Frequency Tracking System and Method**
Inventors: BUCHWALD *et al.*
Our Ref: 1875.0560001

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Credit Card Payment Form (PTO-2038);
2. Fee Transmittal Form (PTO/SB/17);
3. Second Supplemental Information Disclosure Statement;
4. Ten (10) sheets of Form PTO-1449 listing ninety-two (92) documents;
5. One (1) copy each of sixty-seven (67) documents; and
6. One (1) return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

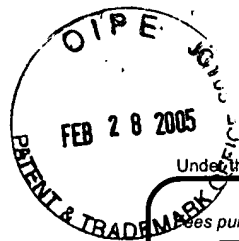
Patrick E. Garrett

Attorney for Applicants

Registration No. 39,987

PEG/WWJ/mlb
Enclosures

369226_1.DOC



Equivalent to Form
PTO/SB/17 (12-04)

Approved for use through 07/31/2006.

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 180.00

Complete if Known

Application Number 09/844,432
Filing Date April 30, 2001
First Named Inventor BUCHWALD et al.
Examiner Name Perilla, Jason M.
Art Unit 2634
Attorney Docket No. 1875.0560001

METHOD OF PAYMENT (check all that apply)

☐ Check ☒ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____
☒ Deposit Account Deposit Account Number: 19-0036 Deposit Account Name: Sterne, Kessler, Goldstein & Fox P.L.L.C.
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)
☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee
☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

Total Claims 34 - 20 or HP = 14 x Fee (\$)
HP = highest number of total claims paid for, if greater than 20
Fee Paid (\$)
Indep. Claims 14 - 3 or HP = 11 x Fee (\$)
HP = highest number of independent claims paid for, if greater than 3
Fee Paid (\$)

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets 149 - 100 = 49 / 50 = 1 (round up to a whole number) x Fee (\$)
Fee Paid (\$)

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other: Information Disclosure Statement fee

Fees Paid (\$)
180.00

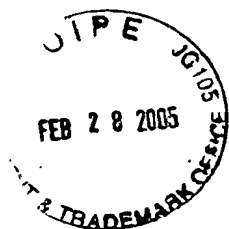
SUBMITTED BY

Signature Patrick E. Garrett Registration No. 39,987 Telephone (202) 371-2600
Name (Print/Type) Patrick E. Garrett Date 2/28/05

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of:

BUCHWALD *et al.*

Appl. No.: 09/844,432

Filed: April 30, 2001

For: **Timing Recovery and
Frequency Tracking System
and Method**

Confirmation No.: 9072

Art Unit: 2634

Examiner: Perilla, Jason M.

Atty. Docket: 1875.0560001

Second Supplemental Information Disclosure Statement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Where the publication date of a listed document does not provide a month of publication, the year of publication of the listed document is sufficiently earlier than the effective U.S. filing date and any foreign priority date so that the month of publication is not in issue. Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- ☐ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- ☒ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
 - ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than

three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

☒ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of **\$180.00** in payment of the fee under 37 C.F.R. § 1.17(p).

☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$_____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:

☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than

three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☐ 6. A concise explanation of the relevance of the non-English language document(s) appears below in accordance with 37 C.F.R. § 1.98(a)(3).
- ☒ 7. Copies of the documents listed in the sections entitled 'Foreign Patent Documents' and 'Other Documents' are enclosed. However, in accordance with 37 C.F.R. § 1.98(a)(2), copies of the U.S. patents and patent application publications cited on the attached Form PTO-1449 are not enclosed.
- ☐ 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____,

filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

- ☐ 9. It is expected that the examiner will review the prosecution and cited art in parent application no. _____ in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution history has been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

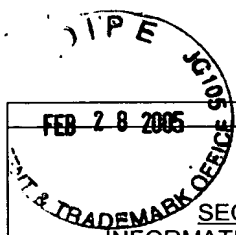
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Patrick E. Garrett
Attorney for Applicants
Registration No. 39,987

Date: 2/28/05

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600



FEB 28 2005

FORM PTO-1449

ATTY. DOCKET NO.
1875.0560001

APPLICATION NO.
09/844,432

SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT

INVENTORS
BUCHWALD *et al.*

FILING DATE
April 30, 2001

ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA1	5,396,224	03/1995	Dukes <i>et al.</i>			
	AB1	5,550,546	08/1996	Noneman <i>et al.</i>			
	AC1	5,768,268	06/1998	Kline <i>et al.</i>			
	AD1	5,822,143	10/1998	Cloke <i>et al.</i>			
	AE1	5,881,107	03/1999	Termerinac <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF1	EP 1 006 697	06/2000	EP			N/A
	AG1	EP 1 139 619	10/2001	EP			N/A
	AH1	WO 01/29991	04/2001	WO			N/A

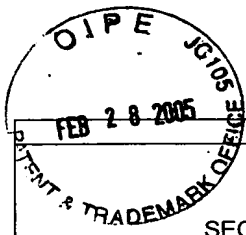
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI1	Black, Jr., W. and Hodges, D., "Time Interleaved Converter Arrays," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-15, No. 6, December 1980, pages 1022-1029.
	AJ1	Conroy, C. <i>et al.</i> , "An 8-b 85-MS/s Parallel Pipeline A/D Converter in 1- μ m CMOS," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. 28, No. 4, April 1993, pages 447-454.
	AK1	Dally, W. and Poulton, J., "Transmitter Equalization for 4Gb/s Signalling," <i>Proceedings of Hot Interconnects IV</i> , Palo Alto, CA, 1996, 10 pages.
	AL1	Ellersick, W. <i>et al.</i> , "A Serial-Link Transceiver Based on 8GSample/s A/D and D/A Converters in 0.25 μ m CMOS," <i>IEEE International Solid-State Circuits Conference</i> , IEEE, 2001, page 58-59 and 430.
	AM1	Ellersick, W. <i>et al.</i> , "GAD: A 12-GS/s CMOS 4-bit A/D Converter for an Equalized Multi-Level Link," <i>Symposium on VLSI Circuits Digest of Technical Papers</i> , 1999, pages 49-52.
	AN1	Eklund, J-E. and Gustafsson, F., "Digital Offset Compensation of Time-Interleaved ADC Using Random Chopper Sampling," <i>IEEE International Symposium on Circuits and Systems</i> , IEEE, May 28-31, 2000, pages III-447 thru III-450.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**

ATTY. DOCKET NO.
1875.0560001

APPLICATION NO.
09/844,432

INVENTORS
BUCHWALD *et al.*

FILING DATE
April 30, 2001

ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA2	5,949,820	09/1999	Shih <i>et al.</i>			
	AB2	6,005,445	12/1999	Katakura			
	AC2	6,009,534	12/1999	Chiu <i>et al.</i>			
	AD2	6,038,269	03/2000	Raghavan			
	AE2	6,134,268	10/2000	McCoy			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF2	WO 01/54317	07/2001	WO			N/A
	AG2	WO 01/65788	09/2001	WO			N/A
	AH2	WO 01/84702	11/2001	WO			N/A

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI2	Fu, D. <i>et al.</i> , "A Digital Background Calibration Technique for Time-Interleaved Analog-to-Digital Converters," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. 33, No. 12, December 1998, pages 1904-1911.
	AJ2	Guizani, M. and Al-Ali, A., "PC-Compatible Optical Data Acquisition Unit," <i>Instrumentation and Measurement Technology Conference</i> , IEEE, May 10-12, 1994, pages 1099-1102.
	AK2	Jenq, Y.-C., "Digital Spectra of Nonuniformly Sampled Signals: A Robust Sampling Time Offset Estimation Algorithm for Ultra High-Speed Waveform Digitizers Using Interleaving" <i>Transactions on Instrumentation and Measurement</i> , IEEE, Vol. 39, No. 1, February 1990, pp. 71-75.
	AL2	Mason, R. and Taylor, J.T., "High-Speed Electro-Optic Analogue to Digital Converters," <i>IEEE International Symposium on Circuits and Systems</i> , IEEE, 1993, pages 1081-1084.
	AM2	Niewczas, P. <i>et al.</i> , "Error Analysis of an Optical Current Transducer Operating with a Digital Signal Processing System," <i>IEEE Transactions on Instrumentation and Measurement</i> , IEEE, Vol. 49, No. 6, December 2000, pages 1254-1259.
	AN2	Petraglia, A. and Mitra, S., "Analysis of Mismatch Effects Among A/D Converters in a Time-Interleaved Waveform Digitizer," <i>IEEE Transactions on Instrumentation and Measurement</i> , IEEE, Vol. 40, No. 5, October 1991, pages 831-835.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449 SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT	ATTY. DOCKET NO. 1875.0560001	APPLICATION NO. 09/844,432
	INVENTORS BUCHWALD <i>et al.</i>	
	FILING DATE April 30, 2001	ART UNIT 2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA3	6,329,859 B1	12/2001	Wu			
	AB3	6,359,486 B1	03/2002	Chen			
	AC3	6,397,048 B1	05/2002	Toda			
	AD3	6,404,525 B1	06/2002	Shimomoura <i>et al.</i>			
	AE3	6,498,694 B1	12/2002	Shah			

FOREIGN PATENT DOCUMENTS

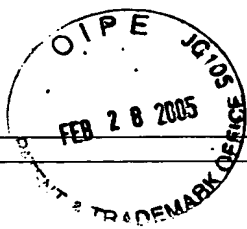
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF3	WO 01/84724	11/2001	WO			N/A
	AG3	WO 02/13424	02/2002	WO			N/A
	AH3	WO 02/071616	09/2002	WO			N/A

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI3	Sauer-Greff, W. <i>et al.</i> , <i>Maximum-Likelihood Sequence Estimation of Nonlinear Channels in High-Speed Optical Fiber Systems</i> , April 6, 2001, Retrieved from the Internet at http://www.ftw.at/Dokumente/010406a.pdf , 29 pages.
	AJ3	Williamson, R.C. <i>et al.</i> , "Effects of Crosstalk in Demultiplexers for Photonic Analog-to-Digital Converters," <i>Journal of Lightwave Technology</i> , IEEE, Vol. 19, No. 2, February 2001, pages 230-236.
	AK3	Yang, C-K., <i>Design Techniques for High-Speed Chip-to-Chip Links</i> , Retrieved from the Internet at http://web.doe.carleton.ca/courses/97578/topic5/Tutorial_SerialLink.pdf , 31 pages.
	AL3	Yang, C-K. <i>et al.</i> , "A Serial-Link Transceiver Based on 8-Gsamples/s A/D and D/A Converters in 0.25- μ m CMOS," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. 36, No. 11, November 2001, pages 1684-1692.
	AM3	Zuoxi, T., "Implementation of a Digital Multibeam Receiver Based on TMS320C80 for Laser Optoacoustic Remote Sensing," <i>Proceedings of ICSP2000</i> , IEEE, 2000, pages 2082-2084.
	AN3	Agazzi, O. and Lenosky, T., <i>Algorithm to Postprocess Measured Data</i> , IEEE 802.3ae Equalization Ad Hoc Group, January 10, 2001, 11 pages.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

ATTY. DOCKET NO.
1875.0560001

APPLICATION NO.
09/844,432

**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**

INVENTORS
BUCHWALD *et al.*

FILING DATE
April 30, 2001

ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA4	6,509,773 B2	01/2003	Buchwald <i>et al.</i>			
	AB4	6,621,862 B1	09/2003	Dabell			
	AC4	6,791,388 B2	09/2004	Buchwald <i>et al.</i>			
	AD4	2002/0012152 A1	01/2002	Agazzi <i>et al.</i>			
	AE4	2002/0034222 A1	03/2002	Buchwald <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF4						Yes No
	AG4						Yes No
	AH4						Yes No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI4	Agazzi, O., <i>A Link Model for Equalized Optical Receivers</i> , IEEE 802.3ae Equalization Ad Hoc Group, March 11, 2001, 30 pages.
	AJ4	Agazzi, O. <i>et al.</i> , <i>DSP-Based Equalization for Optical Channels: Feasibility of a VLSI Implementation</i> , IEEE 802.3ae, New Orleans, September 12-14, 2000, 39 pages.
	AK4	Agazzi, O. <i>et al.</i> , <i>Interim Observations on Multimode Optical Channels</i> , IEEE 802.3ae - Equalization Ad Hoc, Tampa, November 5, 2000, 29 pages.
	AL4	Agazzi, O. <i>et al.</i> , <i>Measurements of DMD-Challenged Fibers at 3.125Gb/s</i> , IEEE 802.3ae Equalization Ad Hoc, January 10, 2001, 33 pages.
	AM4	Agazzi, O. and Lenosky, T., "Measurement of Non-Stationarity of 10 Gb/s Multimode Fiber Links," November 24, 2000, 5 pages.
	AN4	Agazzi, O., <i>10 Gb/s PMD Using PAM-5 Modulation</i> , IEEE 802.3, Dallas, January 18-20, 2000, 19 pages.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**ATTY. DOCKET NO.
1875.0560001APPLICATION NO.
09/844,432INVENTORS
BUCHWALD *et al.*FILING DATE
April 30, 2001ART UNIT
2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA5	2002/0044617 A1	04/2002	Buchwald <i>et al.</i>			
	AB5	2002/0044618 A1	04/2002	Buchwald <i>et al.</i>			
	AC5	2002/0080898 A1	06/2002	Agazzi <i>et al.</i>			
	AD5	2003/0086515 A1	05/2003	Trans <i>et al.</i>			
	AE5	2004/0212416 A1	10/2004	Buchwald <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF5						Yes No
	AG5						Yes No
	AH5						Yes No

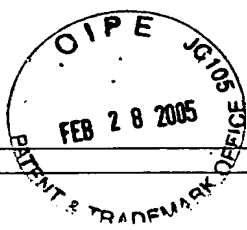
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI5	Agazzi, O. <i>et al.</i> , 10 Gb/s PMD Using PAM-5 Trellis Coded Modulation, IEEE 802.3, Albuquerque, March 6-10, 2000, 38 pages.
	AJ5	Bhatt, V., <i>Equalization Ad Hoc Concluding Report</i> , IEEE P802.3ae Plenary, March 2001, 12 pages.
	AK5	Bingham, J.A.C., "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come," <i>IEEE Communications Magazine</i> , IEEE, Vol. 28, No. 5, pages 5-8 and 11-14.
	AL5	Chiddix, J. <i>et al.</i> , "AM Video on Fiber in CATV Systems: Need and Implementation," <i>IEEE Journal on Selected Areas in Communications</i> , IEEE, Vol. 8, No. 7, September 1990, pages 1229-1239.
	AM5	Darcie, T., "Subcarrier Multiplexing for Lightwave Networks and Video Distribution Systems," <i>IEEE Journal on Selected Areas in Communications</i> , IEEE, Vol. 8, No. 7, September 1990, pages 1240-1248.
	AN5	Fettweis, G., "High-Rate Viterbi Processor: A Systolic Array Solution," <i>IEEE Journal on Selected Areas in Communications</i> , IEEE, Vol. 8, No. 8, October 1990, pages 1520-1534.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

ATTY. DOCKET NO.
1875.0560001

APPLICATION NO.
09/844,432

**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**

INVENTORS
BUCHWALD *et al.*

FILING DATE
April 30, 2001

ART UNIT
2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA6						
	AB6						
	AC6						
	AD6						
	AE6						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF6						Yes No
	AG6						Yes No
	AH6						Yes No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI6	Fettweis, G., "Parallel Viterbi Algorithm Implementation: Breaking the ACS-Bottleneck," <i>IEEE Transactions on Communications</i> , IEEE, Vol. 37, No. 8, August 1989, pages 785-790.
	AJ6	Forney, Jr., G.D., "The Viterbi Algorithm," <i>Proceedings of the IEEE</i> , IEEE, Vol 61, No. 3, March 1973, pages 268-278.
	AK6	Frazier, H., <i>IEEE 802.3 Higher Speed Study Group</i> , IEEE 802.3 HSSG, Kauai, Hawaii, November 9, 1999, 24 pages.
	AL6	Giaretta, G. and Lenosky, T., <i>Adaptive Equalization of DMD Challenged Multimode Fiber at 1300 mm</i> , IEEE P802.3ae Plenary, March 11, 2001, 10 pages.
	AM6	Hatamian, M. <i>et al.</i> , "Design Considerations for Gigabit Ethernet 1000Base-T Twisted Pair Transceivers," <i>IEEE 1998 Custom Integrated Circuits Conference</i> , IEEE, 1998, pages 335-342.
	AN6	Isaacs, M <i>et al.</i> , <i>Measurements of Fiber Responses at 5 Gb/s Data Rate Using 850nm VCSELs</i> , IEEE 802.3ae Equalization Ad Hoc, March 11, 2001, 18 pages.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

ATTY. DOCKET NO.
1875.0560001APPLICATION NO.
09/844,432**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**INVENTORS
BUCHWALD *et al.*FILING DATE
April 30, 2001ART UNIT
2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA7						
	AB7						
	AC7						
	AD7						
	AE7						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF7						Yes No
	AG7						Yes No
	AH7						Yes No

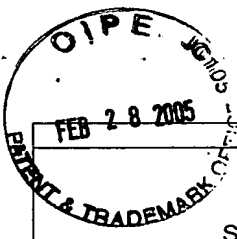
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI7	Kanno, N. and Ito, K., "Fiber-Optic Subcarrier Multiplexing Video Transport Employing Multilevel QAM," <i>IEEE Journal on Selected Areas in Communications</i> , IEEE, Vol. 8, No. 7, September 1990, pages 1313-1319.
	AJ7	Kasper, B.L., "Equalization of Multimode Optical Fiber Systems," <i>The Bell System Technical Journal</i> , American Telephone and Telegraph Company, Vol. 61, No. 7, September 1982, pages 1367-1388.
	AK7	Kasturia, S. and Winters, J., "Techniques for High-Speed Implementation of Nonlinear Cancellation," <i>IEEE Journal on Selected Areas in Communications</i> , IEEE, Vol. 9, No. 5, June 1991, pages 711-717.
	AL7	Lenosky, T., <i>A Unified Method of Calculating PMD-induced Pulse Broadening</i> , IEEE 802.3ae Equalization Ad Hoc Meeting, Tampa, Florida, November 5, 2000, 8 pages.
	AM7	Lenosky, T. and Giaretta, G., <i>Five Gb/s Multimode DMD at 850 nm: Real-Time Data and Equalizer Simulations</i> , Finisar Corporation, March 11, 2001, 13 pages.
	AN7	Lenosky, T. <i>et al.</i> , <i>Measurements of DMD-Challenged Fibers at 850nm and 2Gb/s Data Rate</i> , IEEE 802.3ae - Equalization Ad Hoc Group, January 10, 2001, 21 pages.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

ATTY. DOCKET NO.
1875.0560001APPLICATION NO.
09/844,432**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**INVENTORS
BUCHWALD *et al.*FILING DATE
April 30, 2001ART UNIT
2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA8						
	AB8						
	AC8						
	AD8						
	AE8						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF8						Yes No
	AG8						Yes No
	AH8						Yes No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI8	Lenosky, T. <i>et al.</i> , <i>Measurements of DMD-Challenged Fibers at 1310nm and 1Gb/s Data Rate</i> , IEEE 802.3ae - Equalization Ad Hoc Group, January 10, 2001, 21 pages.
	AJ8	Liu, M-K. and Modestou, P., "Multilevel Signaling and Pulse Shaping for Spectrum Efficiency in Subcarrier Multiplexing Transmission," <i>IEEE Journal of Lightwave Technology</i> , IEEE, Vol. 12, No. 7, pages 1239-1246.
	AK8	Olshansky, R. <i>et al.</i> , "Subcarrier Multiplexed Coherent Lightwave Systems for Video Distribution," <i>IEEE Journal on Selected Areas in Communications</i> , IEEE, Vol. 8, No. 7, September 1990, pages 1268-1275.
	AL8	Olshansky, R. <i>et al.</i> , "Subcarrier Multiplexed Lightwave Systems for Broadband Distribution," <i>IEEE Journal of Lightwave Technology</i> , IEEE, Vol. 7, No. 9, September 1989, pages 1329-1341.
	AM8	Otte, S. and Rosenkranz, W., "A Decision Feedback Equalizer for Dispersion Compensation in High Speed Optical Transmission Systems," <i>International Conference on Transparent Optical Networks</i> , IEEE, 1999, pages 19-22.
	AN8	Parhi, K. <i>et al.</i> , <i>Parallel Implementation of the DSP Functions of the PAM-5 10Gb/s Transceiver</i> , IEEE 802.3ae Task Force, March 2000, 12 pages.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

ATTY. DOCKET NO.
1875.0560001APPLICATION NO.
09/844,432**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**INVENTORS
BUCHWALD *et al.*FILING DATE
April 30, 2001ART UNIT
2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA9						
	AB9						
	AC9						
	AD9						
	AE9						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF9						Yes No
	AG9						Yes No
	AH9						Yes No

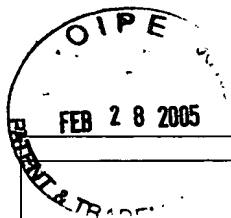
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI9	Peral, E. <i>et al.</i> , <i>Measurements of time variation in DMD-challenged multimode fiber at 1310nm for 10GE equalizer applications</i> , IEEE P802.3ae Equalization Ad Hoc, IEEE, March 2001, 19 pages.
	AJ9	Personick, S.D., "Baseband Linearity and Equalization in Fiber Optic Digital Communication Systems," <i>Bell System Technical Journal</i> , American Telephone and Telegraph Company, Vol. 52, No. 7, September 1973, pages 1175-1194.
	AK9	Personick, S.D., "Receiver Design for Digital Fiber Optic Communication Systems, I," <i>Bell System Technical Journal</i> , American Telephone and Telegraph Company, Vol. 52, No. 6, July-August 1973, pages 843-874.
	AL9	Personick, S.D., "Receiver Design for Digital Optic Systems," <i>National Telecommunications Conference</i> , IEEE, Atlanta, Georgia, November 26-28, 1973, Vol. 1, pages 8E-1 - 8E-4.
	AM9	Vorenkamp, P. <i>et al.</i> , <i>Analog Interface for 10-Gb/s Ethernet</i> , IEEE 802.3ae Task Force, March 2000, 13 pages.
	AN9	Winters, J. and Gitlin, R., "Electrical Signal Processing Techniques in Long-Haul Fiber-Optic Systems," <i>IEEE Transactions on Communications</i> , IEEE, Vol. 38, No. 9, September 1990, pages 1439-1453.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

ATTY. DOCKET NO.
1875.0560001APPLICATION NO.
09/844,432**SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**INVENTORS
BUCHWALD *et al.*FILING DATE
April 30, 2001ART UNIT
2634**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA10						
	AB10						
	AC10						
	AD10						
	AE10						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AF10						Yes No
	AG10						Yes No
	AH10						Yes No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	AI10	Winters, J. et al., "Reducing the Effects of Transmission Impairments in Digital Fiber Optic Systems," <i>IEEE Communications Magazine</i> , IEEE, June 1993, pages 68-76.
	AJ10	<i>Progress Report on Equalization of Multimode Fibers</i> , IEEE 802.3ae Ad Hoc Group on Equalization, January 12, 2001, 16 pages.
	AK10	Alderrou, D. et al., <i>XAUI/XGXS Proposal</i> , IEEE 802.3ae Task Force, May 23-25, 2000, 28 pages.
	AL10	Winters, J.H. and Gitlin, R., "Electrical Signal Processing Techniques in Long-Haul, Fiber-Optic Systems," <i>IEEE International Conference on Communications</i> , IEEE, Vol. 1, April 16-19, 1990, pages 0397-0403.
	AM10	
	AN10	

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.